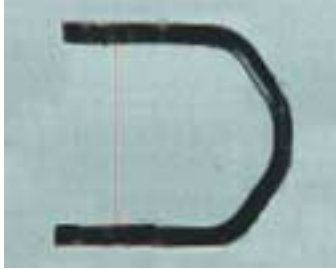


MEDICAL



MEASURING DIMENSIONS ON SURGICAL STAPLES

Problem – In order to avoid potentially disastrous jamming of suture staplers during surgery, a manufacturer of surgical staples needed a way to precisely measure the overall width of auto suture staples, as well as determine the length of each staple leg. While a laser-based inspection system was in place, it could only perform one measurement at a time, making the process very time consuming. The company decided to evaluate several smart cameras for the job. However, over-sensitivity to lighting variations and “hot-spots” frequently resulted in falsely rejected staples.

Solution – In-Sight measures the entire profile of each staple accurately and reliably – despite the effects of inconsistent lighting. Part features can be measured within a few thousandths of an inch, ensuring that each staple is dimensionally correct and reducing the number of false rejects.



VERIFYING THE PRESENCE OF SYRINGES IN PACKAGES

Problem – To ensure package integrity, a medical device manufacturer was using a PC-based vision system to verify the presence of syringes in packages. It was also used to ensure that no portion of a syringe was jutting out of its package. While the system kept pace with the high-speed inspection rate of 300 parts per minute, it often had trouble recognizing syringes through the plastic blisters due to wrinkles and reflections. In order to verify package integrity, an operator would need to stop the line and look at the parts manually. These constant interruptions were having a negative impact on production throughput.

Solution – In-Sight reliably inspects each syringe package without interruption. Using its robust *PatFind* tool for part location, In-Sight is able to easily distinguish the presence of a syringe from its visually-confusing plastic background. It can also measure the relative position of the syringe to the blister to ensure that no portion of the syringe is jutting out of the seal, thereby eliminating the risk of product contamination.



GUIDING THE ROBOTIC HANDLING OF DIGITAL THERMOMETERS

Problem – A maker of electronic medical products needed to guide a robot to retrieve digital thermometers and place them into packages. While a smart camera was being used to guide the robot, inconsistent factory lighting and shadows caused by the robot arm moving over the part often prevented the device from accurately finding the part. In some cases, the robot would fail to pick up a thermometer. In others, inaccurate vision results would cause the robot’s end effector to collide with a thermometer, damaging the device.

Solution – In-Sight finds each thermometer as it moves down the conveyor belt despite appearance changes caused by shadows and lighting variations. Once the positional coordinates of the part are communicated to a robot controller, the robot can then grip the part at a specified point and place it into a package.

RELATED APPLICATIONS

- Measuring dimensions on heart catheters
- Measuring syringe needles for proper length
- Verifying the correct assembly of cholesterol home screening kits
- Verifying the correct assembly of diabetes test monitors